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The study of the composition of the visean coal in the eastern part of the east-european platform (Russia federation) in connection with the prospects of their exploitation using well methods

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Abstract

© SGEM2018. An important source of hydrocarbons is coal which is often associated with oil deposits. In the Volga-Ural oil and gas province (Russian Federation) coal resources in the Visean deposits of the Carboniferous Period exceed 3.5 billion tons. They are located at depths of about 1 km and are inaccessible to mine operations. At the same time, coals can be exploited by well methods as a source of gaseous raw materials. The power gas from coal seams can be used in the development of deposits of high-viscosity oils in adjacent or overlying oil-bearing deposits. For these purposes it is important to know the composition of the organic and inorganic matter of the coals. Visean coals for the most part are metamorphosed to the bituminous coal stage, but at places retain the properties of brown coal. The studies of the coal metamorphism have shown that the reflectance values of vitrinite (Ro) vary in a rather wide range from 0.44 to 0.73%. This parameter depends on the depth of occurrence and the power of heat fluxes in zones of tectonic disturbances. The mineral substance of fossil coals is important to assess the quality of coals and to develop their processing technologies. The main form of the presence of rare elements in coal is mineral phases of pelite dimension, which are difficult to diagnose by traditional methods. In the studied coals, mineral grains of dimension 0.1-50 μm are presented which are effectively studied by scanning electron microscopy. The main minerals in Visean coals are quartz, calcite, feldspar (mainly albite), gypsum, pyrite; kaolinite predominates in the clayey substance; rutile, magnetite, sphalerite are more rare. Coal deposits, formed within a stable platform, are surrounded by carbonate rock strata. They are characterized by the relative homogeneity of the mineral composition and are impoverished by microcomponents.

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Keywords

Coal, Composition, Exploitation, Organic and inorganic matter, Power gas

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